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GLAUCOMA SCREENING IN SAN JOSE

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Glaucoma is the second leading cause of adult blindness in California, as it is in the rest of the country. A major effort to locate previously undiagnosed cases of this preventable cause of sight loss was started in the San Jose City Health Department in December, 1960, with the opening of a permanent glaucoma screening clinic. This clinic, scheduled twice a week, is the culmination of several years of effort by members of the medical profession, interested citizens, and health department personnel.

The unique feature of the screening clinic is that it is a continually operating service in contrast to one-day mass screening programs. In starting the clinic, private physicians provided medical resource and over-all leadership; concerned citizens provided the enthusiasm, legal assistance and financial support; and the health department provided facilities and organizational "know how."

Historical Background

Several years of hard work in planning, fund raising, and other activities preceded the opening day of the clinic. Historically, concern with finding cases of early undiagnosed glaucoma in San Jose can be traced to conversations among a group of local ophthalmologists as far back as 1954, followed by some demonstration screening in an institution.¹

Interest of the San Jose City Health Department in a preventable

eye condition of children, amblyopia ex anopsia (dimness of vision in one eye resulting from disuse), developed shortly after this and resulted in a demonstration project for early detection of this cause of blindness in children. In 1956, in conjunction with the mass Salk vaccine immunization clinics, public health nurses utilized the opportunity to provide information about amblyopia ex anopsia and to instruct parents of young children on the techniques for screening children at home.²

Local ophthalmologists, who assisted the department as consultants, realized the casefinding opportunities available through existing health department services. Through their interest, the health department's Advisory Eye Health Committee was organized. Its members were local ophthalmologists, the director of the California State Health Department's Blindness Prevention Program, the city health officer, chief public health nurse, and chief health educator. This committee initiated a review of school health records for missed cases of amblyopia ex anopsia³, demonstrated a vision screening program in nursery schools, and organized an in-service training session on amblyopia ex anopsia for the department's public health nurses.

As a result of these experiences with screening, the eye health committee found a way to approach the problem of glaucoma by establishing a glaucoma screening clinic. The value of such a clinic had been indicated by the experiences of the Brookline, Massachusetts, health department.^{4,5}

Prior to the opening of the clinic, representatives of the committee approached local ophthalmologists and the Santa Clara County Medical Society regarding their interest and support for the program. The cooperation of both of these groups throughout the entire planning period was most helpful. Interested individuals in the community were invited to sit as a citizens' committee on eye health for the purpose of establishing a glaucoma detection center.

In 1959, more than 30 persons attended the first meeting of the Citizen's Committee on Eye Health. This group was composed of physicians, representatives of various health and welfare agencies, and concerned citizens. After an initial orientation to the need for a glaucoma detection center a steering committee was formed to initiate a plan for the establishment of the clinic.

A site was selected, clinic activities were defined, a board of directors established, and incorporation was finally achieved under the name of Sight Conservation Research Center. A modest budget was outlined, to be underwritten by a gift from a private business firm and a small one-year project development grant from the State Department of Public Health.

The board of directors maintain community relations, establish and maintain liaison with the medical community; determine operating standards for the clinic, raise funds, and handle all the financial aspects of the clinic.

Included on the 36-member board are physicians (not more than nine), representatives of health and welfare

* The authors wish to acknowledge the assistance in the preparation of this article of: Mary T. Williams, M.D., Medical Director, Glaucoma Screening Clinic; and Daniel G. Vaughan, Jr., M.D., Chairman, Board of Directors, Sight Conservation Research Center, San Jose, California.

agencies, and representatives from industry. A high proportion of industrial representation was planned because of the steering committee's interest in promoting glaucoma screening programs in industry. An executive committee conducts the business of the organization between the semi-annual board of directors meetings.

Clinic Personnel

After a trial run in December of 1960, the clinic has been held twice a week. It is staffed by a physician, a nurse, and volunteers. Existing clerical personnel in the health department accept telephone appointments and provide general clerical services.

Volunteers supplement the skills of the professional staff by registering, giving tests, and assisting the physician in the examination room. A volunteer training and orientation program was established to brief volunteers on the purpose of the organization; to familiarize them with glaucoma and with the screening procedures used at the clinic; to instruct them on registration procedures, and techniques of conducting certain of the screening tests.

Four volunteers are used at each clinic session and, at the present time, 35 volunteers assist on a rotating basis.

Operation of the Clinic

The glaucoma detection clinic is located in the health department building in facilities ordinarily used for child health conferences.

Persons desiring to have their eyes tested must be 35 years or over. There is no residence requirement, but an appointment is necessary. Four appointments are made for each 15-minute period and a total of 44 appointments are made, generally by telephone, for each clinic session. A reminder card is mailed to each person making an appointment. This procedure keeps missed appointments to a minimum and has encouraged persons to call if an appointment cannot be kept.

The ophthalmologists on the board of directors decided which tests were to be used at the clinic. At the present time there are four major procedures: a visual field test using the Harrington-Flocks Field Screener, a visual acuity test using the Snellen chart projected on a screen, observation of the optic nerve head and pupil angle with the ophthalmoscope, and tonometry.

The patient is initially registered by one of the volunteers. Besides the usual background information, he is asked two questions, one about the presence of glaucoma among relatives, the other about high blood pressure. These questions were included to provide some impressions for future research. The patient is also asked to sign a statement permitting the personnel of the Sight Conservation Research Center to give the tests.

In separate rooms, trained volunteers administer the screening test for loss in the visual field, and the test of visual acuity. The patient then enters the examining room where anesthetic drops are placed in his eyes. The drops take effect while the previously prepared patient is being examined. Before this procedure was instituted, there was always a backlog of patients, who had completed all of their other tests, waiting to see the physician. In addition to eliminating this backlog, this procedure provides the second patient an opportunity to observe the quick, casual, and painless manner in which the tonometer test is given.

Before leaving the clinic, the patient has an interview with the clinic nurse. At that time, his test results are interpreted and questions are answered.

Referral

A patient with an elevated eye pressure reading (Schiotz tonometer) is referred to an ophthalmologist. A patient with an intermediate reading receives a recheck appointment, at which time he is only tested with the tonometer. Upon retest, if the intraocular pressure is the same as or higher than the earlier reading, he is then referred to an ophthalmologist. This procedure has minimized the number of false referrals.

If referral is necessary and the patient does not know a practicing ophthalmologist, a list of local specialists is given to him by the nurse.

The test results are transposed onto a form letter and placed in an envelope which is given to the patient. It is the patient's responsibility to take them to a private physician. Enclosed with the letter is a post card which the physician is requested to complete indicating whether or not, in his estimation, the patient has glaucoma. This is the only information the clinic requests from the ophthalmologist.

Follow Up

To make certain that the patient sees a physician, certain follow up procedures have been integrated into the routine operations of the clinic.

The clinic nurse maintains a record of the diagnosis returned by the physician. Whenever the post card is not returned within a reasonable length of time the nurse calls the physician if his name is known. In evaluating the first two months of the clinic's operation it was found that about 40 percent of the post cards had not been returned. A follow up of these unreported cases showed that a majority of the patients had seen a physician, but the physician was reluctant to send in either a positive or negative report without further examination. In such cases, the physician was urged to indicate a tentative diagnosis with comments relating to further office examination.

When a patient has not visited a physician, a telephone or home call is made to impress upon the patient the importance of having a medical examination. At the present time there are only 15 cases which have not been completely processed out of 130 referrals for glaucoma.

Publicizing the Clinic

Initially, the various senior citizen groups in the community were approached to take advantage of the clinic's services. Government employees in the civic center area, where the health department is located, also were informed about the clinic. Prior to its opening the first week of January, 1961, a full page picture article appeared in the local newspaper explaining the purposes of the clinic and describing the kinds of tests given. As a result of this one article, over 800 appointments were made, filling 20 full clinic sessions. Subsequently, additional short news releases have appeared in the newspaper and the local television station filmed the operation of the clinic for one of its news programs.

Many others hear about the clinic through contact with persons who already have been tested. The operator of the X-ray minifilm unit has encouraged a large number of persons who are X-rayed to make appointments for the glaucoma clinic. At the present time, a short announcement appearing in the newspaper once a month, along with the above mentioned approaches, has been sufficient to fill clinic sessions.

The health department has produced a brochure which describes the program and illustrates the test.

Equipment

The initial investment for equipment was approximately \$1000. The major equipment purchased includes: 1 projectoscope, 1 projectoscreen, 3 ophthalmoscopes, 1 heat sterilizer for ophthalmoscopes, 2 field screeners, and 2 tonometers.

Other incidental supplies were either purchased or donated by pharmaceutical companies. The industrial plant in which the first industrial glaucoma survey was conducted purchased four examination tables for the clinic.

X-ray Minifilm

Since it is conveniently located, the X-ray minifilm service has been made available to persons attending the glaucoma clinic. About half of them utilize this service. Although inconclusive since the numbers are small, one of the interesting results of this effort has been an apparently higher referral rate for suspicious chest conditions among persons from the glaucoma screening clinic in comparison with the general population. The usual referral rate of the X-ray unit for any suspicious condition of the chest is about 1 per 500 X rays. For people from the glaucoma screening clinic taking advantage of this service, the referral rate is about 5 per 500 X rays.

Industrial Screening Program

A major objective of the Sight Conservation Research Center is the development of glaucoma screening programs in industry. The first opportunity for such a program came shortly after the clinic was opened when a member of the board of directors offered his printing plant for a survey. This firm employs about 100 workers over the age of 35. The arrangements for screening these employees at the plant were made by the clinic nurse and chief public health nurse of the health department. Volunteer ophthalmologists recruited from the community participate in the program. Clinic volunteers assisted in registering and testing for visual acuity. The management, after being oriented to the program, accepted responsibility for encouraging the workers to take advantage of the screening services and achieved 100 percent participation.

Three previously unknown glaucoma cases were found. Several persons were referred for cataracts and many more for refractive errors. Workers with an intermediate reading were referred to the regularly scheduled glaucoma screening clinic for rechecks before being referred to their physicians. A time study showed that it required about ten minutes of the worker's time to complete the tests, excluding the visual field screening test which was eliminated in this industrial screening program.

Program Results

By summer, 1961, a total of 3,286 persons had been tested at the health department clinic and at three industrial sites and one senior citizen center. Of this number, 130 persons were referred to private physicians for further tests for glaucoma. This number included 21 individuals tested at the clinic who knew they had glaucoma, 5 of whom had lapsed treatment. There were 441 persons referred for other causes including cataracts and

Results, Glaucoma Screening Program, by Sex—San Jose, 1961

	Total	Males	Females
Total number tested	3286	1612	1674
Previously known glaucoma	21	10	11
Under treatment	16	5	11
Not under treatment	5	5	--
Net number tested	3265	1602	1663
Negative test	3156	1560	1596
Referred (positive test)	109	42	67
Followup			
Incomplete	60	19	41
Diagnosis pending recheck by physician	45	16	29
Report not returned	15	3	12
Complete	49	23	26
Negative diagnosis	22	6	16
Glaucoma	27	17	10

Number Tested, Number Referred, and Number and Rate of Glaucoma Cases by Age Group—San Jose, 1961

Age group	Total number tested	Number referred	Diagnosis of Glaucoma	
			Number	Rate per 100 persons tested
All ages	3265	109	27	.83
Under 40	728	8	2	.28
40-49	955	21	3	.31
50-59	599	24	6	1.0
60-69	568	31	6	1.1
70 and over	408	25	10	2.5
Unknown	9			

low vision. Results of the glaucoma screening are given below. Some other surveys have reported rates higher than those obtained in San Jose. However, the clinic staff has felt, on the basis of the most carefully done studies, that 1 to 2 previously unknown glaucoma cases per 100 persons tested is an expected case finding rate.⁶ It should be noted that half of all those tested were under age 50. As in reports of other studies, the incidence by age rises sharply after 50.⁷

It should prove very interesting to follow the group for which the diagnosis is pending recheck by the physician to learn the number of persons with borderline intra-ocular pressure who eventually develop glaucoma.

The total cost of operating the clinic is estimated at about \$1.40 per patient screened, based on the amortization of equipment over five years. Without regard to the value to the patient that may attach to negative findings, the cost of discovering a glaucoma case is estimated at about \$175. Considering that it costs about \$1200 per year to support one blind person under the categorical aid program for the blind supervised by the Santa Clara County Welfare Depart-

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ment, it is apparent that early case discovery is of significant economic benefit to the taxpayer. The annual tax funds to maintain three persons blind from a preventable cause such as glaucoma would easily support the San Jose Screening Clinic for an entire year.

San Jose's Sight Conservation Research Center was commended for its pioneer glaucoma screening activities in a resolution introduced by Senator Thompson in the 1961 California legislative session.

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Nine Stipends Awarded for Public Health Training

Stipends amounting to \$16,842 were awarded by the California State Department of Public Health to nine persons for professional training in public health this fall.

Two were granted for pursuit of degrees in masters of public health in health education, three for masters of science in sanitary science, and four for certificates in public health nursing.

The students will be attending the University of California School of Public Health at Berkeley, the University of Michigan, Chico State College, San Jose State College, the University of Minnesota, and the University of Oregon.

Daniel Collins, D.D.S., Appointed To State Board of Health

Daniel A. Collins, D.D.S., San Francisco dentist and educator, has been appointed to the State Board of Public Health by Governor Edmund G. Brown.



Dr. Collins succeeds Henry J. Volonte, D.D.S., of Hillsborough, whose term has expired. The appointment is for four years.

Dr. Collins was graduated from Paine College in Augusta, Georgia, in 1936 and received his dental degree at Meharry Medical College in Nashville, Tennessee in 1941. He received his master's degree in dentistry at the University of California in 1944.

In addition to a private practice as a dentist and oral pathologist, Dr. Collins has served as a member of the faculty of the University of California College of Dentistry since 1942. He is a member of the dental staff of Mt. Zion Hospital.

In 1956, he began a two-year tour of duty as an oral pathologist at the Walter Reed Army Medical Center in Washington, D. C., leaving in 1958 as a lieutenant colonel.

He has been a member of President Kennedy's Committee on Selective Service and was a member of the State of California's Governor's Committee on Medical Aid and Health.

He is a member of the American Dental Association, the National

Unit Seeks Heart Trouble Before Damage Occurs

A compact electronic unit on wheels simultaneously records 12 different types of information about heart function and may spot trouble early before actual heart damage occurs.

Known as the heart function analyzer, the unit has been donated to the University of California Medical School at Los Angeles.

The new weapon in the battle against heart disease is a 2x4x3 $\frac{1}{2}$ (feet) mobile unit that can be wheeled into a laboratory or to a patient's bedside. Such sources of information as heart sounds, electrocardiograms, pulse pressure and frequency analysis of heart mechanical activity are recorded simultaneously. Research with the device is being carried out primarily at the Los Angeles Veterans Administration Center.

A small microphone placed on the chest just above the subject's heart picks up information recorded by the machine. This information is translated into 12 tiny light beams, which play upon a light sensitive roll of paper, and is thus recorded permanently for analysis by the investigators.

Low frequency vibrations reflect activity of the heart muscle itself as well as the valve sounds which dominate the usual audible range of the stethoscope and the standard phonocardiogram.

Experiments to date have demonstrated the new analysis system can pick up many subtle changes in heart function not apparent in conventional electrocardiograms. It has also demonstrated an increased accuracy of 22 percent over the electrocardiogram in detecting coronary disease.

Dental Association, the American Society for the Advancement of Science, and is an alternate to the House of Delegates of the California Dental Association.

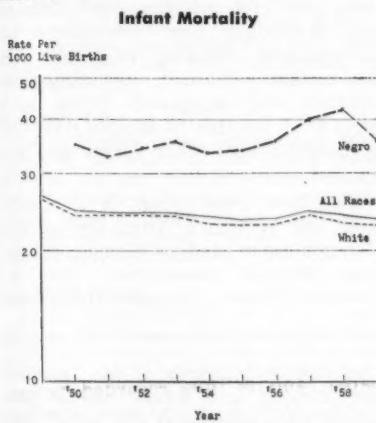
He is a member of the editorial staff of the California State Dental Association Journal and has been the author of more than 20 publications, and is a contributor to a textbook on pain and dentistry.

Dr. Collins is married and has four children.

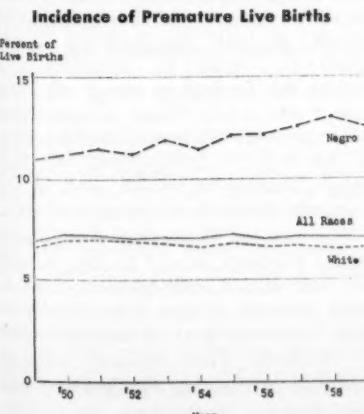
Rising Infant Death Rate Still a Puzzle

The upswing in death rates for California's infants during recent years remains largely unexplained. Until 1955, there had been a steady decline in infant mortality rates. In 1955, the trend changed and started to climb back up again to 24.8 per thousand live births in 1957. However, in 1958 the rate started back down, reaching 23.6 in 1959.

Particularly alarming are the unfavorable findings for the Negro population.



While data for earlier years are not available for the Negro population, what information can be examined shows not only that infant death rates for the Negro population are much higher than for the rest of the population but also the incidence of premature live birth is much greater. Although the over-all incidence of premature live birth has for many years appeared to be fixed at about 7 percent of the total live births, the figure for the Negro population has



New Test Reveals Heart Damage

A relatively simple and accurate new test for heart damage, involving only a small sample of the individual's urine, has been reported from the University of California at Los Angeles Medical School.

The procedure is called the urine glutamic oxalacetic transaminase (UGOT) test. The test may also measure the rate of repair of heart damage.

Glutamic oxalacetic transaminase (GOT) is an enzyme which apparently plays an important but not too well understood part in amino acid metabolism. It is particularly abundant in heart muscle.

During the acute heart muscle damage (myocardial infarction) that follows a heart attack, the enzyme leaks out of damaged heart cells and appears in high concentration in the blood. Its activity is generally proportional to the amount of heart damage.

Several years ago the serum transaminase test, which measures GOT in the blood serum, was developed. Since that time it has been used widely in the diagnosis of myocardial infarction.

In recent years a number of researchers had attempted to develop a simpler transaminase procedure with urine. However, the fact that the activity of this enzyme rapidly disappeared on standing at room temperature presented a problem.

It was recently found that if the urine sample were refrigerated immediately after it was taken, the GOT persisted for at least two days. Thus the sample would be suitable for GOT determination.

increased from 10.8 percent in 1949 to 13 percent in 1958 and 12.5 percent in 1959.

The reasons for this undesirable trend for the Negro population are not clear, and studies are currently being planned to obtain an explanation for this change in mortality and morbidity.

Were each child in California to begin receiving the recommended amount of fluoride today, it is estimated that by 1970 twenty-three and a half million teeth would be saved.

First of New Monograph Series Now Available

The first in a new series of monographs has been published by the Program of Continuing Education of the Western Branch, American Public Health Association, and the University of California Schools of Public Health. *The Voluntary Health Agency—Meeting Community Needs* contains seven papers presented as a part of a course for voluntary health agency personnel.

Purpose of the Continuing Education Program is to provide public health professionals of the western states an opportunity to keep abreast of new trends and developments in the field of public health.

The papers published in the monograph are: "Philosophy and Significance of the Voluntary Health Agency Movement" by Dalrie Lichtenstiger, Executive Director, California Tuberculosis and Health Association; "Planning in the Voluntary Health Agency to Meet the Health Needs of the Community" by David DeMarche, Ph.D., Director of Social Planning, United Community Fund of San Francisco; "Beyond the Principles—A Short Course in Organization Theory" by Julian Feldman, Ph.D., Assistant Professor of Business Administration, University of California School of Business, Berkeley; "Health Education and Community Action" by Beryl Roberts, Dr. P.H., Associate Professor of Public Health, University of California School of Public Health, Berkeley; "Behavior in Groups—Some Principles of Group Process" by Dorothy Nyswander, Ph.D., Professor Emeritus, University of California School of Public Health, Berkeley; "The Consultative Process" by Hugh Croley, Ph.D., Lecturer in Public Health Administration, University of California School of Public Health, Berkeley; and "Cultural Factors Influencing Community Health" by J. Albert Torribio, Director of Health Education, Los Angeles City Health Department.

The monograph is available for \$1.00 from: Continuing Education Program, Western Regional Office, American Public Health Association, 693 Sutter Street, San Francisco 2, California. Agencies which have a membership in the American Public Health Association can purchase the monographs in quantities at a 25 percent discount.

New Occupational Disease Reported

California is experiencing a new occupational disease in its mushroom growing industry, similar to a disease which has been reported among mushroom farm workers in Ontario, Canada, and Pennsylvania.

Although California has been raising commercial mushrooms for more than 40 years, the new disease first appeared during the spring months of 1960, and again in increased severity this spring. Some 80 men have been affected to date: all employees of one large mushroom growing establishment.

The disease, though severe, with fever and chills, cough, nosebleeds and skin trouble, does not appear to endanger life nor is it permanently incapacitating. The cause is suspected to be a yet unidentified mold spore that has infected the mushroom beds, and affects the growers when they break up the mushroom beds at the end of each growing cycle.

The Bureau of Occupational Health, California State Department of Public Health, has spent considerable time and effort to determine the true nature of this new disease, which as yet has not been fully described in the medical literature. Endeavors are being made to prevent its spread to the other more than 60 mushroom growers in California.

Alcoholism Information Week

Alcoholism Information Week, November 26 to December 3, 1961, will be observed throughout the United States with particular emphasis in communities with established treatment and rehabilitation facilities for problem drinkers. Local councils on alcoholism, clinics, state institutions, Alcoholics Anonymous and voluntary organizations interested in the control and prevention of alcoholism are expected to step up their public relations and education activities during this week.

In California, programs are scheduled in communities where clinics, National Council on Alcoholism affiliates, or other alcoholism facilities exist, including San Francisco, Los Angeles, San Diego, San Jose, Oakland, Santa Barbara, Pasadena, Long Beach, Modesto, Santa Rosa, Stockton, Sacramento and Monterey.

High Frequency Hearing Loss in Children: An Unsolved Riddle

Since 1944, at which time the California State Department of Public Health began its statewide conservation of hearing program, there has developed a growing interest in hearing impairment of children at frequencies above the range considered medically significant or essential to conversation. Early in the program, emphasis was placed on the identification and medical follow up of children with hearing levels in excess of 20 decibels at frequencies ranging from 125 c.p.s. (cycles per second) through 4,000, 8,000 and even 12,000 c.p.s. At that time many medical authorities were of the opinion that a "high frequency hearing loss" in children frequently indicated the presence of a middle ear (Eustachian tube) blockage, i.e., a conductive type hearing impairment. In recent years, however, the medical interest in high frequency loss has given way to a general concept that the only hearing impairments which might require medical or audiological consideration are those which lie within the frequency range of 500 through 2,000 c.p.s. Yet, a few physicians and audiologists still maintain that diminished hearing acuity at 250 c.p.s. or at 4,000 c.p.s. and above warrant further study.

There is lack of complete agreement among medical specialists, audiologists and teachers in special education regarding the cause and/or prognostic significance of high frequency hearing impairments in children. At one time medical authorities attributed "island like" hearing impairment at 4,000 c.p.s. to probable acoustic trauma. However, hearing test surveys conducted in a variety of schools and at age levels ranging from six years to sixteen years failed to support this belief. The 4,000 c.p.s. "dip" does appear more frequently among boys of school age than among girls.

It is generally voiced that hearing impairment at frequencies above 6,000 c.p.s. are of little or no medical and educational significance. Technical and other factors appear to affect test responses at these frequencies. Among the difficulties encountered are the improper adjustment of the audiometer receivers over the child's ears and electronic problems in maintaining calibration of the receivers at 8,000

New Homemaker Manual

The Woman's Auxiliary to the American Medical Association has completed a 32-page manual designed to assist communities in establishing a homemaker service. Titled "How to Plan a Community Homemaker Service" the new manual gives step-by-step suggestions for local groups to follow in enlisting community support, organizing, and operating a homemaker service. Included are chapters on basic purposes, preliminary organization and planning, auspices, suggested constitution and by-laws, publicity, selecting staff, financing, screening and recruiting of homemakers, training programs for homemaker personnel, operating procedures, and suggested forms and records. A number of sample referral, application and other forms are appended.

The new publication is available from the Woman's Auxiliary or the Department of Medical Service, American Medical Association, 535 N. Dearborn Street, Chicago 10, Illinois.

c.p.s. Some teachers of the aurally handicapped and school health personnel have expressed the belief that deviations from the normal at these very high frequencies may indicate a possible progressive type deafness, one which should be investigated and followed closely with repeated audiometric tests in the schools. Lacking, however, is documented evidence confirming this concern.

Special education personnel, e.g., teachers of the hard of hearing, the deaf, and those concerned with speech correction and remedial lip reading instruction, have expressed belief that high frequency hearing losses are important. Many of the sounds of speech, phonetic elements, e.g., k-t-p-s-f-sh-t-th, weak in intensity, lie within the frequency range of 2,000 and 6,000 c.p.s. These sounds, and other phonetic elements, are essential to the child's development of language, fluency in speech, and in the comprehension of the spoken word.

The medical profession, special education teachers, school health personnel, and school audiometrists need to work toward solving the "riddle of high frequency hearing impairments" in children. This problem impedes progress in meeting the hearing and speech needs of children.

Public Health Positions

Contra Costa County

Chief, Public Health Analyst: Salary range, \$644 to \$782. Must have three years experience in public health statistical work with a degree in biostatistics, public health or economics statistics, or equivalent subjects. Inquire of Contra Costa County Civil Service Department, Room 229, Hall of Records, Martinez, California.

Los Angeles City

Sanitarian: Salary range, \$545 to \$677. California registration required.

Radiological Health Technician: Salary range, \$608 to \$755. Must have had two years of professional experience in radiological safety work or in occupational health including radiological health.

For either position, write to the Recruitment Division, Los Angeles City Civil Service Commission, City Hall, Los Angeles 12, California.

Pasadena City

Public Health Nurse: Salary range, \$494-\$602. To perform field and clinical work. Requires RN and PHN from State of California. Excellent working conditions and liberal benefits. Direct inquiries to Personnel Director, Pasadena City Hall, 100 North Garfield Avenue, Pasadena, California.

San Diego County

Public Health Nutritionist: Salary range, \$507 to \$559. Responsibilities include acting as nutrition consultant for the health department staff, school personnel and other community agencies; giving direct service at health department clinics. Master's degree in either nutrition or public health required, and at least one year's experience within the last ten years as a nutritionist in an official public health agency.

Supervising Public Health Nurse: Salary range, \$532 to \$647. California certification as a public health nurse, a current RN license, School Health and Development Credential, and a California driver's license are required. Those who have had courses in supervisory techniques will be given preference.

Send application for either position to the Department of Civil Service and Personnel, Civic Center, San Diego, California.

San Jose City

Clinical Psychologist: Salary range, \$646-\$807. Ph.D. in clinical psychology from accredited college or university is required, plus one year internship or equivalent supervised training and one year of post-doctorate experience in the practice of clinical psychology.

Mental Health Nurse: Salary range, \$532-\$665. Graduation from a college or university program approved for public health nursing by the National League for Nursing is required. Candidate must also have had advanced study in mental health nursing and two years recent experience in public health nursing involving teaching, supervision, consultation, or equivalent.

Public Health Nurse: Salary range, \$463-\$578. Requirements include completion of an accredited course of training for nurses supplemented by training in a school or public health nursing program, California registration, and possession of RN and PHN

New Stanislaus County Health Center

An H-shaped building fronting Scenic Drive on the grounds of the county hospital in Modesto will house the Stanislaus County Health Center after the first of the year if construction continues at the contracted rate. The new building will be a low, ground-hugging structure of brick and glass covering 17,265 feet of floor space. It is designed to house 61 staff members.

Total cost of building and equipment is expected to be about \$471,687, to which the State and federal governments are each contributing \$146,703, the remainder to be carried by the county.

certificates. Education and experience should qualify candidate for Health and Development Credential.

For any of these positions, apply to Civil Service Department, Room 211, City Hall, 801 North First Street, San Jose, California.

San Mateo County

Milk and Dairy Inspector: Salary range, \$505-\$632. Position is with the sanitation section of the San Mateo Health and Welfare Department. Requires registration as Dairy and Milk Inspector issued by the California Department of Agriculture. Apply: Civil Service Commission, Courthouse, Redwood City.

Santa Clara County

Occupational Health Physician: Salary range, \$1209-\$1469. Appointment may be possible at second or third step. To administer the occupational health program in the county. Requires license to practice medicine in California or eligibility for a license; must be board qualified or certified in occupational medicine. For more information, contact W. Elwyn Turner, M.D., Director of Public Health, Santa Clara County Health Department, 2220 Moorpark Avenue, San Jose 28, California.

Ventura

Microbiologist: Salary range, \$423-\$515. Requires California certification. For further details, write Personnel Office, Court House, Ventura, California.

Low income families lose more days from work than families in higher income brackets, according to data from the United States National Health Survey. Families with incomes of \$2,000 or less lose an average of 10.3 days from work each year, compared to 5.9 days lost by families with incomes of \$7,000 or more. *Source Book of Health Insurance Data, 1960*, Health Insurance Institute, 488 Madison Avenue, New York 22, N.Y.

THE ACCIDENT PROBLEM IN CALIFORNIA

This is the third of a series relating to the accident problem in California. Death statistics are based on data for 1959. Estimates of persons injured and related figures are based on the California Health Survey.

Accidents to Children

Each year there are approximately 1,074 accidental deaths among children under 15 years in California.

Accidents are the leading cause of death among children after the first year of life. They cause about 32 percent of all deaths of children 1-4 and about 37 percent for ages 5-14.

The most common fatal accidents among children are motor vehicle accidents, drowning, and fire and explosion. Together they cause about 60 percent of the accident toll.

The recent California Health Survey (July 1957 through June 1958) estimates that 1,767,000 children are injured each year in California.

These children represent 38 percent of all persons injured.

About 56 percent of these injuries occur in or about the home.

Personals

Lester Breslow, M.D., Chief of the Division of Preventive Medical Services, SDPH, has been appointed by Governor Brown to the Board of Administration of the State Employees Retirement System to assist in administering the new State employees health insurance plan. His is one of three new posts created by the Legislature in an act which sets up a health insurance program for the 120,000 State employees. The plan will go into effect January 1, 1962.

Wallace L. Chan, M.D., from Atherton, California, has been appointed special assistant to John D. Porterfield, M.D., Deputy Surgeon General of the Public Health Service. Dr. Chan is assistant clinical professor of medicine at the Stanford University School of Medicine.

Publications of Interest

The following publications of interest to medical, hospital, and public health workers are not available from the State Department of Public Health. To obtain copies, please write to the source indicated.

Hospital Development and Communities, Beatrice Dinerman, UCLA Bureau of Governmental Research. This study is one of the few comparing the hospital growth patterns of established areas with those of new fast-growing areas. It is of special interest to community planners, hospital administrators, public health officers, and other physicians. It is available from the UCLA Bureau of Governmental Research, Los Angeles, California, for \$1.30; checks should be made payable to the University of California Board of Regents.

Health Statistics from the U.S. National Health Survey—Arthritis and rheumatism reported in interviews. This summary presents statistics by age, sex, and medical care status on the prevalence of arthritis and rheumatism and the disability due to these conditions. It is based on data collected in household interviews during the National Health Survey period July 1957-June 1959 and is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. for 25 cents.

A Manual for a Rheumatic Fever Registry, prepared by the U.S. Public Health Service, is a 26-page guide to help state and local health depart-

ments plan and operate rheumatic fever control programs; it is based on the experiences of many areas with established rheumatic fever registries. Direct requests to Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.

Health, Education, and Welfare Indicators, and *Health, Education, and Welfare Trends*, published by the Department of Health, Education, and Welfare, feature statistical measurements of social trends in the nation. *Indicators*, published monthly, highlights current information on health conditions, educational problems, consumer interests, social security, welfare, and vital statistics. Month-to-month changes and relationships are presented. *Trends*, published annually, furnishes perspective on long-

term developments by presenting annual data for several past decades and projections to the 1970's. It contains some data which is available only on an annual basis, such as social welfare expenditures, and federal grants-in-aid. Both publications are available from the Superintendent of Documents, U.S. Government Printing Office, Washington D.C. *Indicators*: Yearly subscription—\$3.50; single copies, 35 cents each. *Trends*: 50 cents each.

The effective epidemiologist is above all an opportunist in the finest sense. In order to isolate various genetic and environmental factors which influence the incidence and severity of disease, he must carefully select groups which show (a) marked differences with respect to incidence and severity of the disease under study, but (b) marked similarity in all genetic and environmental factors except those being considered. The laboratory scientist can usually control these factors at will; he can also introduce modifications into his experiment. The epidemiologist, however, cannot modify either subject or environment. Instead he must seize upon the "experiment of opportunity," those fortuitous natural modifications which can be studied and analyzed in the same way as laboratory sequelae. Fortunately, the world abounds in such opportunities.—*Patterns of Incidence of Certain Diseases Throughout the World*, U.S. Government Printing Office.

MEETINGS SCHEDULED

1961

October 23-24—California Conference of Local Mental Health Directors, Santa Monica

October 25-26—California Conference of Local Health Officers, Semi-Annual Meeting, Yolo County

October 26-28—California Association of Medical Technologists, Annual Meeting, Monterey

October 27—Northern California Public Health Association, Santa Cruz

November 13-17—American Public Health Association Annual Meeting, Detroit

1962

March 22-24—American Orthopsychiatric Association Meeting, Los Angeles

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